

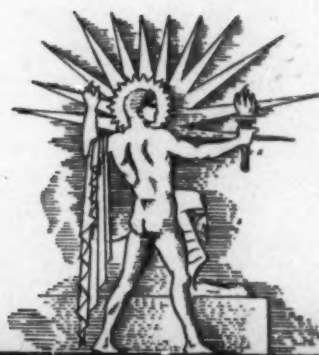
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SCIENCE NEWS LETTER

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THE WEEKLY SUMMARY OF CURRENT SCIENCE •



MAY 25, 1935

Off To the Races

See Page 337

SCIENCE SERVICE PUBLICATION

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The Weekly



Summary of

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Edited by WATSON DAVIS

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DO YOU KNOW?

Snakes have cancer, but it is apparently rare.

Fort Worth, Texas, has a new botanic garden built by relief labor.

New strains of hybrid corn are proving sturdy against chinch bug attack.

Girls in a nursery school proved slightly better than boys in handling scissors in paper cutting tests, psychologists report.

Oysters are an excellent food source of vitamin B, relatively good in vitamin A, and a very modest source of vitamin D.

It is estimated that about nine million birds annually rear their young on the isolated refuge of the Pribilof Islands in Bering Sea.

A new emergency ration for deer herds in winter consists of a cake of concentrated foods held together by molasses and stored in airtight metal cans.

Very tall people are commoner in Africa than any other continent.

Diabetes is believed more prevalent than tuberculosis in New York City.

Eight kinds of North American birds have become extinct in the past 35 years.

Wild pomegranates, which grow extensively in Transcaucasia, are being used as a source of citric acid.

Indians are being aided by the Government to form livestock associations, to enable them to handle their stock and land problems more effectively.

Modern furriers find in Aesop's writings, 600 B. C., an early note on their trade, because Aesop mentions washing and soaking hides in a flowing stream.

The Field Museum in Chicago has opened an exhibit of extinct birds, including the heath hen, Eskimo curlew, passenger pigeon, Carolina parakeet, and Labrador duck.

WITH THE SCIENCES THIS WEEK

Most articles are based on communications to Science Service or papers before meetings, but where published sources are used they are referred to in the articles.

AGRICULTURE

Can a hybrid wheat be fertile? p. 336.

ARCHAEOLOGY

How did Sennacherib commemorate his victories? p. 336.

Where was the shrine of the Aztec lady of the lake? p. 335.

Where was the stage for the Joseph and Moses stories of the Bible? p. 332.

ASTRONOMY

How can you see an eclipse of the sun at midnight? p. 338.

BOTANY

What is the difference between a mushroom and a toadstool? p. 341.

CHEMISTRY

How can workers keep dirt off their hands? p. 337.

Where does Britain get most of her bromine? p. 335.

EPIDEMIOLOGY

What sort of treasure have scientific explorers now found on "Treasure Island"? p. 335.

HOROLOGY

How did King Tutankhamon tell time? p. 334.

MEDICINE

How should physicians search for enlargement of the heart? p. 340.

What medicine would cause the skin to turn blue, when used excessively? p. 340.

What treatment is effective in cases of black widow spider bites? p. 333.

PALEONTOLOGY

Where is the world's richest fossil mine? p. 337.

PHYSICS

How can a top walk downstairs? p. 331.

PHYSIOGRAPHY

What practical value would a map of the earth's radioactivity have? p. 340.

PHYSIOLOGY

What effect has your after-dinner mint? p. 339.

PLANT PHYSIOLOGY

How can plants be prevented from becoming poisonous through selenium absorption? p. 332.

PSYCHIATRY

Are wicked people likely to go insane? p. 337.

How are diabetes and epilepsy antagonistic? p. 331.

What do skin tests tell physicians about mental diseases? p. 341.

What is "spontaneity training"? p. 336.

What types of mental disease have been caused by religious excitement? p. 331.

Who was the first physician known to analyze dreams? p. 337.

PSYCHOLOGY

Can conditioned reflexes be acquired without being performed? p. 336.

Where does thinking take place? p. 333.

PSYCHIATRY

Glands and Emotions Seen As Factors in Epileptic Attacks

Study of Two Rare Cases of Diabetes in Epileptics Points to Role of Pituitary in Causing Seizures

A GLANDULAR basis for fits or convulsions such as those occurring in epilepsy and possibility of treating the disease by gland extracts in the future were suggested at the meeting of the American Psychiatric Association. Emotional upsets were also blamed for causing epileptic attacks and good results from psychiatric treatment in such cases and from dietetic treatment of other cases were reported.

The role the glands, particularly the pituitary gland, may play in epilepsy was discussed by Dr. Albert W. Pigott of the New Jersey State Village for Epileptics. Dr. Pigott reported two cases of diabetes occurring in epileptics, a rare occurrence. In records of over eighteen thousand epileptics Dr. Pigott found only thirteen cases of diabetes.

The two conditions are in a way contradictory and Dr. Pigott pointed out that the fundamental mechanisms in the two diseases are antagonistic. Epilepsy, it seems, may be thought of as anti-diabetes. Diabetes is characterized by too much sugar in the blood and diminution of water in the body. In epilepsy there is an accumulation of fluid in the body. During convulsions, furthermore, epileptic patients have less sugar in their blood than in the period between convulsions, Dr. Pigott found. This fits in with the fact that convulsions are a feature of insulin shock, which occurs when a diabetic patient gets more insulin than his body requires to burn the amount of sugar and starch that has been eaten.

Pituitary Plays Part

The pituitary gland is now known to produce a hormone that can bring on the diabetic state of too much sugar in the blood and it also plays an important part in regulating the body's use of water. Dr. Pigott suggested that a decrease in the diabetes-producing hormone of the pituitary may play a role in some cases of convulsions due to deficiency of sugar in the blood. He recalled that Dr. Harvey Cushing, of Yale University, was able to prevent convulsions in some epileptics by giving them pituitary gland substances.

In one of the cases of diabetes complicating epilepsy described by Dr. Pigott, the average number of convulsions was reduced from twelve or thirteen a month to four or five after diabetes had developed.

"It is probable that with a fuller understanding of the endocrines and their interrelationship the problem will be more thoroughly understood," he concluded.

Science News Letter, May 25, 1935

PHYSICS

Physicist Makes Spinning Top Walk Down Stairs

STUDENTS—and not a few of the faculty, too—at West Virginia University are being puzzled these days by the demonstration of Prof. Robert C. Colwell of the Physics Department of a top that walks down stairs.

Prof. Colwell has supplied Science Service with a photograph of the novel demonstration which is shown on this page. Says Prof. Colwell:

"In his book on Gyrostatics and Rotational Motion, Prof. Andrew Gray explains how a top can be made to move along two parallel horizontal wires when

they are rocked so as to change the point of support from one wire to the other. A few years ago, I discovered that a spinning top will automatically walk down two parallel wires arranged as an inclined plane.

"While working with high speed motors, it occurred to me that a rapidly spinning top would have a very slow precession and could be made to walk down two wires bent so as to form a succession of steps.

Height of Riser Important

"My assistant, Mr. Fullmer, who built the top found that the length of the steps and the height of the risers must be very accurately proportioned to the type of top used. The steps should not form a sharp corner with the risers, but must be curved at each junction.

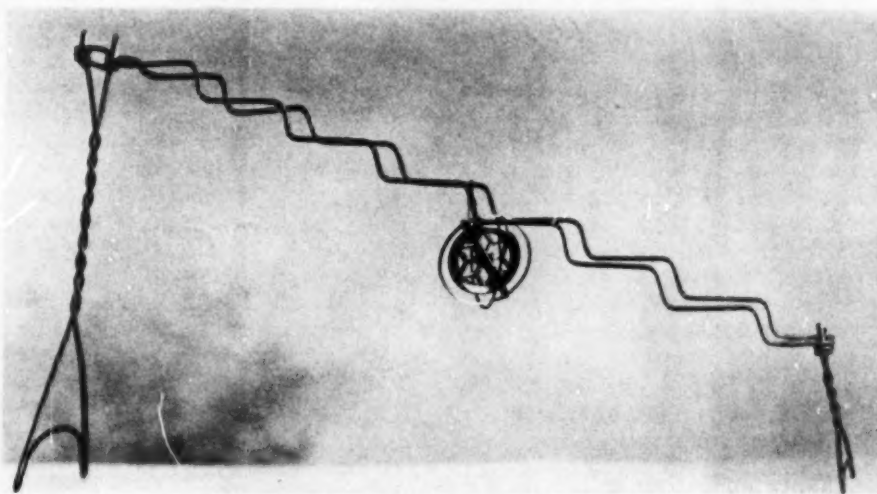
"The top is spun at four to five thousand r.p.m. and held with one hook in the middle of the highest step while the hook on the opposite side is pressed against the second highest riser. The top, when released, will walk down the steps."

Science News Letter, May 25, 1935

PSYCHIATRY

Negro Preacher's Audience Develops Mental Disease

CARRIED away by the wild excitement of the religious meetings of "Father Divine," sixteen of the "angels" of his strange cult have been taken to Bellevue Psychiatric Hospital, New York City, suffering from all sorts of mental diseases. The cases were described to members of the American Psychiatric Association by Drs. Lauretta Bender and Zuleika Yarell of Bellevue. (Turn Page)



TOP WALKING DOWN STAIRS

"Father Divine" is a Negro preacher who has obtained an enormous following during the past three or four years in New York City. His followers are chiefly Negroes, but a few white people are also numbered among his flock.

The followers believe that Father Divine is God. At the meetings, the fervor of the audience is worked up to the point of ecstasy.

Most of those taken to Bellevue Hospi-

tal were persons subject to moods of extreme excitement followed by periods of deep depression, but in the whole group practically every type of mental disease was found, the physicians stated. In each case the individual was affected by the teachings of Father Divine.

Apparently any form of mental disease may be precipitated by taking part in these religious meetings.

Science News Letter, May 25, 1935

ARCHAEOLOGY

Palace of Bible Stories Believed Located In Egypt

THE PALACES of Pharaoh in Egypt where the Bible stories of Joseph and Moses were staged are believed located at last.

Announcing its study of decorated tiles from an Egyptian palace at el Kantir, the Metropolitan Museum of Art, states "in all probability el Kantir is the city Raameses of the tradition of the oppression."

"In fact," says H. E. Winlock, director of the museum, "there is ample reason to believe that these tiles come from the walls of the very palaces which—traditionally at least—were the scenes of the stories in the latter part of Genesis and the first chapters of Exodus."

Several lines of evidence point to this site as Raameses, mentioned in the Bible passage: "And they built for Pharaoh treasure cities, Pythom and Raameses . . . And the Egyptians made the children of Israel to serve with rigor: and they made their lives bitter with hard bondage, in mortar, and in brick."

Occupied For 200 Years

Bricks and tiles from the palaces of el Kantir bear names of Egyptian kings—Sethy I, Ramesses II, Mer-en-Ptah and others of the fourteenth to the twelfth centuries B.C. who reigned during the period generally ascribed to the Bible Egyptian record. The palaces were thus occupied throughout two centuries, during which time, Mr. Winlock says, there is excellent reason to believe they were the northern residence of Egyptian kings.

Mr. Winlock further explains that el Kantir is geographically placed to fit with the Bible account. It is just beyond the confines of the "land of Goshen" where Joseph settled his brethren to have them

near him while he dwelt at court. The Israelites were still dwelling in Goshen when a Pharaoh who "knew not Joseph" set them to labor for him under hard taskmasters. It may have been palaces at el Kantir which the Israelites were building when the famous command went forth to give the workers no straw for brickmaking.

Pharaohs who figured in the Bible narratives of Egypt and the dates of the events have never been conclusively identified.

Scenery From Historic Stage

Regarding historic details in the Bible account of Joseph and Moses, Mr. Winlock says:

"The accuracy of that tradition is not here in question. What is of interest to us is that its originators knew of the palaces of el Kantir and chose them as the stage for the story of Joseph and the story of Moses and that from this stage we have retrieved a few bits of colorful scenery."

The tiles, which provided the first clue to the location of the palaces, came to the Museum's attention as early as 1921, when antiquity dealers offered them in Egypt, vaguely describing their place of origin. The Cairo Museum found the place, and excavated there. Among the hundreds of fragments of decorated tile, unearthed or bought by museums from time to time, the names of the kings who lived in the period have finally been rediscovered.

Science News Letter, May 25, 1935

Georgia has made the pine its official state tree, and the brown thrasher its state bird.

PLANT PHYSIOLOGY

Plants Become Poisonous By Absorbing Selenium

PLANTS are chemically tricked into becoming poisonous to livestock in some parts of the West because a toxic element in the soil, selenium, is chemically a very near relative to the beneficial and necessary element sulphur. So close is their kinship that the absorbing mechanism of the plants cannot tell them apart, and so takes in the bad with the good. The remedy for this situation is to add so much sulphur to the seleniferous soils that the indiscriminating plants will get a great deal more of it than they do of the selenium.

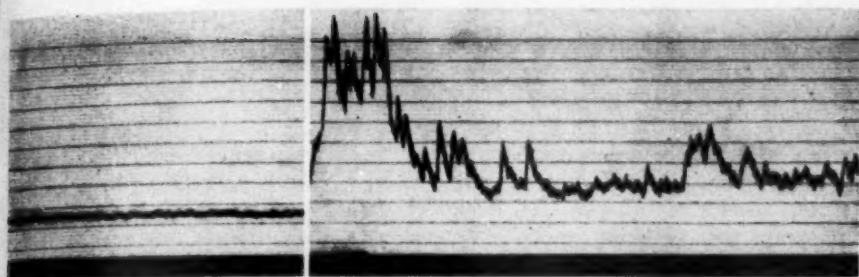
This, in brief summary, is the plant-physiological picture arrived at by Dr. Annie M. Hurd Karrer, of the U. S. Department of Agriculture.

The problem of "selenized" plants is one of the most serious which scientists of the Department have been called upon to solve in recent years. Some time ago, reports began to come in of livestock afflicted with a crippling and finally fatal disease, resulting from eating grain grown in certain parts of the northern Great Plains. The trouble was finally traced to grains grown on soils of one particular geologic type, often low in sulphur but unusually high in the less familiar element selenium.

Laboratory and field plot experiments at the Department of Agriculture securely fastened the blame on the selenium. Then it was found that the poisonous effects on the plants, and through them on animals, could be almost completely counteracted by adding sulphur compounds to the soil. The amounts of selenium taken up by the plants diminished in proportion to the amounts of sulphur added, and this led to the theory that the two "taste alike" to plants, and are absorbed in accordance with their relative availability in the soil.

When the selenium-poisoning problem first presented itself it caused a good deal of concern, for the afflicted areas were in the midst of a region where commercial grain is produced in some quantity. The practical importance of the problem has been diminished at least for the present, by the effects of grasshoppers and drought on the agriculture of the region. However, if there is an agricultural come-back in that part of the country, the information that has been obtained should help in meeting problems that may arise.

Science News Letter, May 25, 1935



HERE IS A DREAM OF CONEY ISLAND

This photograph taken of the electrical current in a sleeper's arm shows you the picture of a dream. At the left is a record made while the individual was just sleeping and snoring restfully. The right section shows how the waves magnified when the sleeper dreamed he was at the amusement resort Coney Island.

PSYCHOLOGY

Photographic Record Made Of a Sleeper's Dream

Psychologist "Taps the Wires" of Human Thought, Picking Up Electric Impulses From Deaf-Mute's Arm

DID YOU ever see a dream walking? Members of the New York Academy of Sciences did recently. At least they saw the photographic tracing it made as it passed through the sleeper's mind.

A photograph, with jagged peaks something like the charts of business increase and depression familiar on the newspaper financial pages, is the first scientific record of what goes on in the mind of a person asleep. It was shown by Dr. Louis W. Max, psychologist of New York University. The peaks revealed to the observing scientist what was going on in the sleeper's brain when he dreamed of Coney Island.

Not occult, not "spirit" pictures, the dream tracings were made with a practical hook-up of familiar electric apparatus, string galvanometer and amplifier. With this device attached to the arms of deaf-mute sleepers, Dr. Max is able to see when a dream begins and how long it lasts, just as the physician with his electrical apparatus is able to watch the tremors and palpitations of the living heart.

Dreams last longer than has been supposed. Instead of being all over in a brief fraction of a minute,—almost instantaneously—one dream was observed to last for 2¾ minutes. When he awoke the sleeper said he had had a long, hazy dream. He could not remember any outstanding incident.

Dreams are remembered much better

when they are interrupted. For this reason, Dr. Max seldom allowed the sleeper to dream it out. He would wake him while the dancing light of the apparatus still showed mental activity was taking place.

Out of 33 persons so awakened, 30 told of dreams broken off when they were roused.

As a check, Dr. Max waked 62 persons while the record showed no activity. Only 9 of the 62 had been dreaming, and most of these had dreamed of seeing something.

Since the hands and arms of deaf-mute persons are used for both conversation and writing, it is natural that the electrodes attached to their arms would pick up electric impulses accompanying most thoughts and dreaming, Dr. Max explained. Dreams of the type of visions, however, may leave their traces elsewhere in the body. Further experiments may show such action currents in the eye-balls, he prophesied.

These electrical traces of thought are like the brain-waves observed by Drs. H. H. Jasper and Leonard Carmichael, of Brown University and Bradley Hospital, Providence, R. I., and reported last January. (SNL, Jan. 19)

They are electric impulses picked up, turned into light and amplified so that they can be seen on a screen or photographed. It has long been known that such electric currents accompany activity

of the nerves, but it is only recently that they have been put to use to find out about the hidden workings of the brain in thought. And it is only within the last few months that scientists in this country have picked them up directly from the brain.

These brain-wave pictures do not tell the whole story, Dr. Max said, because thinking is not confined to the brain. His new photographs show that during dreaming and waking thought electric impulses occur and can be pictured not only in the brain but also in certain outlying muscles of the body.

The brain should be thought of as a telephone switchboard. In taking these pictures the scientist has turned detective and "tapped" the wires near the receiver end.

Do speaking persons have electric currents in their throats and tongues as the deaf-mute person does in his fingers and arms? Dr. Max is trying to find out. The difficulty is to get anyone to go to sleep while his tongue is hooked into the amplifier circuit. So far he has found only four who could sleep under these difficult circumstances. None of them dreamed. But even in dreamless sleep, a current of six microvolts was picked up. This compared with an average of only one microvolt from the arm.

Science News Letter, May 25, 1935

MEDICINE

Black Widow Spider Not So Black as She's Painted

NOT as black or deadly as she has been painted is the latest medical verdict on the "black widow" spider. This partial clearing of the lady spider's reputation is made by Drs. J. M. Frawley and H. M. Ginsburg, of Fresno, Calif. (*Journal of the American Medical Association*, May 18).

The shiny arachnid has come to be feared as something of a nation-wide menace since fatalities from its bite have been reported in increasing numbers.

Fifty-two cases of black widow spider bite have been treated without a fatality in the Fresno General Hospital, these doctors report. The right hospital treatment will save the life of the person the black widow bites, they believe. No treatment or the wrong treatment may result in death.

Here are some details of the treatment they recommend: They put the patient to bed and apply iodine to the site of the bite. They require him to drink large quantities of water and of nonalcoholic fluids. They give him a hypodermic to al-

lay the pain and a sedative to permit rest. Then they inject into his veins a solution of magnesium sulphate, more commonly known as epsom salts. It is the latter treatment that is credited with relieving the abdominal cramps and the other severe symptoms that follow the spider's bite.

An intoxicated man has a poor chance of recovery once the black widow has injected her poison into him. Nor should

any person who has been bitten by this spider be given a drink containing alcohol.

Infants or very small children may not recover from this spider's bite, these Fresno doctors believe, because the amount of poison from the bite is large in comparison with their small bodies and the victims go rapidly into convulsions.

Science News Letter, May 25, 1935

HOROLOGY

Clock Made by Tutenkhamon Found in London Antique Shop

DISPLAYING a clock made by the royal hands of young Pharaoh Tutenkhamon, in the land of Egypt over 1300 years before Christ, Prof. James H. Breasted of the Oriental Institute of the University of Chicago told how courageous Egypt pioneered in conquest of "time and its mysteries."

Prof. Breasted was giving the James Arthur lecture on "Time" at New York University, where the Arthur collection of clocks and watches is maintained.

Tutenkhamon's transit instrument for determining the hour by the stars was found by Prof. Breasted, reposing in an antiquity shop in London. An inscription on the instrument states that Tutenkhamon made it with his own hands.

Prof. Breasted emphasized that the instrument was not unearthed in Tutenkhamon's tomb, but was made by him in restoring tomb equipment of one of his royal ancestors. The shop that had it thought it part of an Egyptian writing kit, and Prof. Breasted was first to recognize its true significance. This timepiece and another belonging to Tutenkhamon's grand-father-in-law are the oldest surviving astronomical instruments in the world, the Egyptologist said.

Telling of man's hard struggle to measure time, resulting in calendar and clock that are so easily taken for granted today, Prof. Breasted brought out point after point from the oldest historic sources and modern primitive tribes.

Among people of low intelligence there is no conception of a long period of time. Modern example: a Dahomey Negro rarely knows how old he is.

Primitive men early observed the cycle of changes in a year. But length of a year, and mere arithmetic of counting the days it occupied were far beyond human powers at first.

For ages, man thought of roughly twelve moons as the length of a year.

The Babylonians based their calendar on moon months. For a time they adjusted it by inserting a month whenever the king noticed that "the year hath a deficiency."

The Greeks inherited their calendar from Babylonia, and wasted their scientific gifts adding one futile refinement after another to the hopelessly inconvenient and complicated lunar calendar.

Even learning of the Egyptian calen-

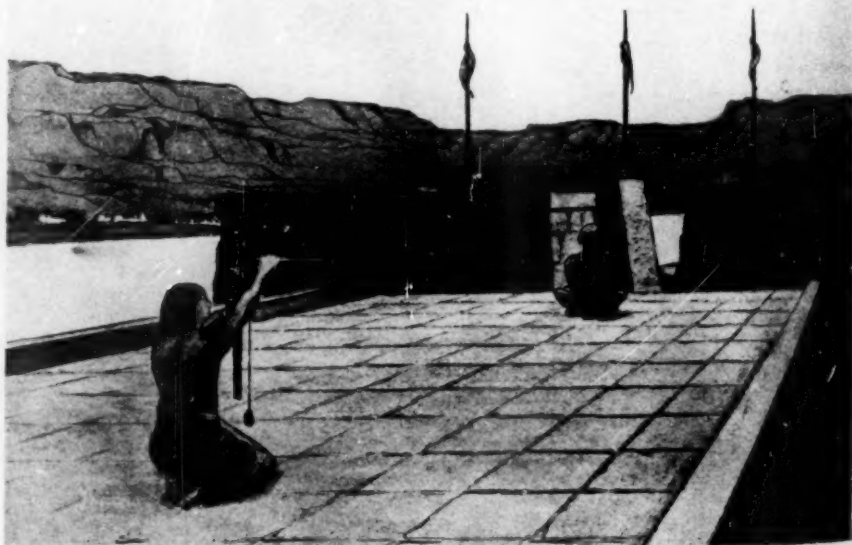
dar, the Greeks could never free themselves of their calendar which had entrenched itself in their beliefs and customs.

Mohammed was so ignorant of the nature of the calendar problem that in the Koran he forbade insertion of intercalary months, a device needed to keep any moon calendar from slipping far behind the solar year. A Moslem year still has 354 days.

The Egyptians were the only ancient people who clearly recognized the lunar year was not "real" and had courage and intellectual freedom to be rid of it. They got their clue to a year's length from the stars, not the sun.

The lucky accident that the heliacal rising of Sirius occurs very near flood time on the Nile gave the Egyptians their fixed point for marking off time into years. They gave the year 360 days at first.

In 4236 B.C., Egypt advanced to having a practically convenient 365-day calendar of 30-day months with five feast days at the end. The date 4236 B.C., computed from references, is given this distinction by Prof. Breasted: "not only the earliest fixed date in history, but also the earliest date in the intellectual history of mankind."



HOW KING TUT'S CLOCK WAS USED

Dr. James Breasted explains that the observer, seated on a meridian line, sighted through the forked top of a palm branch at stars in the northern sky over the head of the squatting assistant. A plummet was held in the observer's right hand so that the plumb-line cut through the star he was observing, and also so that the lower point of the weight was oriented to some part of the assistant's body, the shoulder, for example. Following the star with his plumb-line, the observer watched until the weight pointed to the crown of the assistant's head. The star was then crossing the observer's meridian. A time-table of hours when important stars crossed the meridian or occupied definable positions near it accompanied the transit instrument. The drawing is from the Science Museum, London.

TUTENKHAMON'S CLOCK

This clock bearing Pharaoh Tutankhamon's inscription showing that he made it with his own hands is now in the Oriental Institute of the University of Chicago, through whose courtesy the photograph is used.

EPIDEMIOLGY

Colds Are Caused by Germ; Weather Can't Bring Them On

NO MATTER how much cold and rainy weather a person is exposed to, the individual will not catch a cold unless he is infected by a cold germ caught from another individual, Prof. Wilson G. Smillie of the Harvard University School of Public Health revealed.

Speaking at the annual meeting of the Associated Harvard Clubs, Prof. Smillie described four Harvard expeditions to isolated communities for the purpose of studying the common cold.

The investigations were conducted at Stevenson's "Treasure Island," which is St. John's in the Virgin Islands, at a Hudson Bay trading post on the North-west river in Labrador, at Spitsbergen, the northernmost permanent settlement in the world, and at Happy Hollow on the Patsiliga river in southern Alabama.

Prof. Smillie also revealed that a person with a cold is only infectious for three days, even though he may be coughing and have a temperature after that time.

Summarizing the conclusions of the expeditions in his address, Prof. Smillie said:

"Common colds are an infection and are not due to cold weather. Many people think that colds are due to cold weather but this is not so. In Spitsbergen we found that the people were subjected to intensely cold weather and terrific winds all winter without catching cold; but as soon as the boats came in the spring and carriers of cold germs arrived, most of the people in Spitsbergen caught colds.

"On Stevenson's 'Treasure Island' in the tropics, which had a population of 746 when we were there, we found an almost perfect paradise as far as weather and environmental conditions are concerned. The people there also caught colds, but not as long as they were isolated from contact with carriers of cold germs.

"At the trading post in Labrador we found that the people did not have any colds all winter until a mailman arrived

and brought the cold germs in. Then colds spread to the whole community.

"So we proved that colds are infectious. A person with a cold is infectious, however, only for the first three days. The person may be coughing and have a temperature after three days, but he is not infectious any more."

Explaining the conduct of the investigations in field laboratories, Prof. Smillie said that a study of the causes and spread of colds in modern community life would have been unsatisfactory, since our life is so complex, our contacts so frequent and our environmental influences so varied.

"We attempted to simplify our studies by the establishment of field laboratories in these various isolated communities where human contacts are infrequent, life is simple and environmental factors measurable," he said.

Prof. Smillie led all of Harvard's cold studying expeditions except the one to Spitsbergen which was led by Dr. Harland Paul who has since joined the Rockefeller Foundation. The expeditions have been conducted at intervals since 1927.

Science News Letter, May 25, 1935

ARCHAEOLOGY

Engineers Find Aztec Lady of Lake in Mexico

AN AZTEC water goddess, once the proud lady of the lake which surrounded Mexico City in Aztec days, has been found in the dried lake bed by Mexican engineers.

All that remains of the glory of the "blue skirted one" is her figure made of painted clay and a quantity of Aztec pottery and ornaments. The goddess' shrine, which once rose out of shallow Lake Texcoco, went the way of other pagan Indian shrines when Spanish conquerors advanced on the Aztec capital.

Archaeologists of the National Museum in Mexico City, informed of the discovery, have investigated the site. From old maps they calculate that the water goddess' shrine stood near the lake shore camp of the Spaniards in 1520. Here the Spaniards built brigantines for a second attempt on Mexico City following their initial failure there.

Science News Letter, May 25, 1935

CHEMISTRY

2,000 Tons Per Month of Potash From Dead Sea

POTASH from the waters of the Dead Sea, in Palestine, has now reached a production rate of between 2,000 and 3,000 tons a month. The initial rate, only two years ago, was not more than 1,000 tons a month.

The principal by-product of the potash industry is bromine, which now equals 74 per cent. of the total British requirement for this chemical. Other by-products in economic prospects are potassium sulphate and calcium sulphate, both meeting fertilizer needs of Palestinian soils. (*Die Umschau*, March 17)

Science News Letter, May 25, 1935

ARCHAEOLOGY

**Scientist Hurt by Camel;
Sinai Digging Goes On**

INJURED while journeying by camel caravan to excavate the ancient Egyptian temple of Hathor, in the Sinai Peninsula, Prof. Kirsopp Lake of a Harvard University Expedition is recovering in a hospital at Jerusalem.

News of the accident, received at Harvard University, reports Prof. Lake received internal injuries when bumped by a camel, but continued the journey, and was carried by litter to the top of desolate Mount Serabit el Khadim where the Egyptian temple is located. After supervising the start of excavation at the ruins, his condition became worse and he was rushed to the hospital.

Excavation of the temple is being continued by his associates, and a well preserved stone tablet bearing four vertical columns of legible Sinaïtic script, very early alphabetic writing, has been found. In an old Egyptian mine close to the temple of the Egyptian goddess, was found another stone tablet, an animal head in stone, and several graffiti or scribblings, which are pronounced important by archaeologists.

Science News Letter, May 25, 1935

PSYCHIATRY

**"Bad" Girls Reclaimed by
Rehearsals for Real Life**

RHEARSALS for real life that teach dramatic techniques proved successful by one of today's great dramatic actresses, are about to be used in reclaiming for everyday useful living some of the "bad" or delinquent girls caught in civilization's undertow.

Psychiatrists listened eagerly to Dr. Jacob L. Moreno and Helen Jennings of the New York Training School for Girls when they told of their new experiments.

"Spontaneity training" is what this new sort of dramatic school for real living is called.

It began in Vienna not so long ago. Dr. Moreno gave a spontaneity course there for normal children. A little girl was among the pupils. She is now famous as an actress. Hers is a name that all would today recognize if Dr. Moreno should choose to subdue his modesty and announce it.

In teaching spontaneity, the child is taught to warm up to each new person and each new situation. The pupil is taught to use all her emotional and intel-

lectual powers in meeting and handling the pleasures and difficulties of existence. The perfunctory routine way of doing things is banned. Creative ability is cherished and developed.

Present methods of child training tend to stifle this creative ability, Dr. Moreno believes.

Spontaneity training starts with the child completely relaxed, physically and mentally. Then she is given some simple material to work with, perhaps a piece of modelling clay. She is encouraged to handle this according to her own unguided, undirected ideas. Some children are slow to warm up to the new situation, others do it too quickly, Dr. Moreno finds.

Dr. Moreno has also developed spontaneity tests by which it is possible to discover for what life work the child is best suited.

Science News Letter, May 25, 1935

ARCHAEOLOGY

**Assyrian Stone Slab
In Baltimore Deciphered**

IF ASSYRIAN King Sennacherib, dead these 2,600 years, could have looked in on the American Oriental Society, meeting recently, his royal ego would have been delighted.

One of his royal progress reports, written on good sturdy stone, has turned up in Baltimore, and is receiving scholarly appreciation as a "new version of Sennacherib's campaigns."

Prof. Julius Lewy, of the Jewish Theological Seminary, told of reading the royal inscription at the Walters Art Gallery in Baltimore, and of his keen interest on finding it widely divergent from others telling about this famous Assyrian conqueror-king.

The stone, covered with cuneiform writing on both sides, was expressly made for the purpose of building it into the city wall of Samarra. Prof. Lewy explained. Besides telling about battles won, cities burned and plundered, and enemies vanquished, Sennacherib gave space on the stone to telling what he was doing for the city of Samarra. He had noted the poor condition of this old city, and had ordered improvements. The city was enlarged and a new wall built. Gardens and forests, fruit and wine plantations were to be made around it.

New details of some of Sennacherib's historic campaigns are read for the first time in this version of his career. The conditions of his coming to the throne of Assyria are also better understood from the document.

Science News Letter, May 25, 1935

IN SCIENCE

PSYCHOLOGY

**Animals Can Learn Acts
Without Doing Them**

CONSTANT repetition of an act may be the common way to teach the family animal pet to lie down, sit up, turn over or shake his leg, but animals can learn at least to a limited extent without any actual performance.

Learning to do and doing are two separate operations and require different nervous mechanisms, it was demonstrated before the Midwestern Psychological Association by Dr. Paul H. Settlage of the University of Wisconsin.

The drug sodium amytal—popularly known as a "truth serum"—was used on cats to prove this curious division of mental labor.

When given just the right amount of "truth serum," the cats were then given a mild electric shock and heard a bell ring at the same time. At each shock they would flex their legs but they never did so when the bell alone sounded.

Yet all the while they were learning to associate the bell's sound with the shock, for after the effects of the "truth serum" wore off they flexed their legs when only the bell sounded. The drug prevented them from flexing their legs while they were under its influence but did not prevent them from learning.

Science News Letter, May 25, 1935

AGRICULTURE

**Soviet Plant Breeders
Make Fertile Hybrid Wheat**

AFERTILE hybrid form of wheat has been obtained by crossing ordinary wheat with spelt, by Prof. D. Kostoff of the Institute of Genetics, Academy of Science of the U. S. S. R. Spelt is a plant related to wheat but belonging to a different species, and all hybrids hitherto made have been sterile.

The new hybrid is considered promising from the breeder's viewpoint, since spelt is resistant to a number of plant diseases to which wheat is susceptible. An effort will now be made to transfer these resistant properties by further crossing with hard and soft wheat varieties.

Science News Letter, May 25, 1935

FIELDS

PSYCHIATRY

First Psychoanalyst Was Hippocrates, Not Freud

FREUD, distinguished Viennese professor who started the modern use of psychoanalysis as a specific treatment for disease, was not the first to delve into a patient's past and analyze his dreams in order to cure his illness.

Four centuries before Christ, the Greek physician Hippocrates, Father of Medicine, apparently practiced psychoanalysis. Dr. A. A. Brill, of New York City, told members of the American Psychiatric Association.

By psychoanalytic methods Hippocrates cured a royal patient who was suffering from nervous and mental disease after another physician had failed to cure the patient through diet and medications, Dr. Brill related.

Prof. Freud himself, Dr. Brill said, called attention to the fact that a number of his ideas were either anticipated by others or discovered independently of him. This is particularly true of his conceptions of the dream. But the most remarkable thing, Dr. Brill pointed out, is the early use of dream analysis by Hippocrates.

Science News Letter, May 25, 1935

PALAEONTOLOGY

Patagonia's "Wild West" Yields Unknown Fossils

BONES of an extinct flesh-eating animal related to the kangaroo but much bigger than a grizzly bear, fossil frogs, remains of a totally new kind of fossil browsing animal five feet high, are among the scientific trophies brought back from South America to the American Museum of Natural History, by Dr. George Gaylord Simpson, associate curator of vertebrate paleontology.

Dr. Simpson and his associates made actual a semi-legendary "place of bones" deep in the interior of Argentina's "Wild South," Patagonia, as the result of a chance sight of a fossil jawbone in a bank in Buenos Aires. They went through adventures of an almost Marco Polo type, including a brief sojourn at the ranch of

a veritable ogre of a bushy-eyebrowed killer known as the Terrible Turk, and passage through a land where the natives valued money at nothing, but would sell you anything you wanted for an empty tin can.

Finally, after disappointing searchings in the region to which they had been directed, they found, in a fissure-sided hill, a tremendous deposit of bones, believed to be one of the richest "fossil mines" ever discovered. The deposit appears to be the silted-up bottom of an ancient lake that formed in the crater of an extinct volcano. Apparently animals coming down to drink were overcome and killed by poisonous fumes from cracks in the earth, which were the dying gasps of the old volcano itself.

The bones were so thick, where they had been weathered out in the course of ages, that they cluttered the ground, and the explorers stumbled over them.

The big, hitherto unknown herbivorous animal they found has been named *Scarritia*, in compliment of H. S. Scarritt, sponsor of the expedition.

Science News Letter, May 25, 1935

MARINE ENGINEERING

Yankee's New Welded Mast Saves in Air Resistance

See Front Cover

RETURNING the recent visit of the British yacht *Endeavour* which challenged for the America's Cup last year, the American yacht *Yankee*, shown on the front cover of this week's SCIENCE NEWS LETTER, is now in England for a series of races with British sloops in her J class.

The *Yankee's* newest contribution to yachting is her 165 foot all-welded nickel steel mast, first of its kind ever placed aboard such a large yacht, according to the Lincoln Electric Co.

The mast is 18 inches in diameter at the bottom and 7 inches at the top. Its thickness at the base is 3/16 of an inch and 1/8 inch at the peak. It weighs 5,700 pounds as compared with the 6,200 pound weight of the wooden mast it replaces.

More than that, the new steel mast saves 320 square feet in windage—the yachtsman's term for air resistance which slows up a boat. The saving is equivalent to the sail area of a racing sloop 42 feet long.

During the summer the *Yankee* will meet the *Endeavour*, *Shamrock V* and the King's own veteran cutter *Britannia*.

Science News Letter, May 25, 1935

PSYCHIATRY

Rascals and Sinners Not The Ones Who Go Crazy

"WHOLE-HEARTED rascals and hearty sinners" rarely develop mental disease. The great bulk of patients in hospitals for mental and nervous disorders are the over-conscientious persons with high ideals and standards both of conduct and of living conditions. These observations were made by Dr. John C. Whitehorn of McLean Hospital, Waverly, Mass., at the meeting of the American Psychiatric Association. Dr. Whitehorn was discussing his approach to an understanding of personality in a group of mentally disordered patients.

He found from a study of the group two generally contrasting plans of character organization. The one he called obligative is strong on duty and obligation. The other called zestful might be said to go in chiefly for a good time. Persons who organize their characters and lives on the obligative plan see life in terms of duties and ideals, right and wrong, finicky tastes and esthetic or conventional standards.

The ones organized on the zestful plan look at life in a more hearty, practical and genial way. Persons living on the obligative plan are the ones making up the bulk of patients in hospitals for mental disease.

Science News Letter, May 25, 1935

CHEMISTRY

Vanishing Cream Protects Workers' Hands from Dirt

NEWEST aid for the housewife is an "invisible" glove of vanishing cream, protecting the hands from dirt, paint or grease, which has been developed by the E. I. du Pont de Nemours and Company.

Known as "Pro-Tek," the new product is not a soap but a protecting cream claimed to be entirely harmless and non-irritating.

When rubbed on the hands it dries and apparently disappears leaving them dry and without a greasy feeling. It is now being used by printers, auto mechanics, coal handlers and others who have "dirty" jobs. Around the home housewives find it useful in protecting the hands from the "messy" odd paint jobs, gardening, tending the furnace, and for general housework.

The invisible film is entirely soluble in water and washes off with all the dirt and grime.

Science News Letter, May 25, 1935

ASTRONOMY

June Brings Solar Eclipse

**For the Third Time in 1935, Moon Will Hide Sun
But to See It You Must Be at North Pole at Midnight**

By JAMES STOKLEY

ONE interesting astronomical event scheduled for the month of June is, unfortunately, not visible from any part of the United States or Canada. On the last day of the month will come the year's fourth eclipse, and the third of the sun. But like all the solar eclipses of 1935, a year when there occurs the greatest number possible—five—it is not of particular scientific interest. None of them are total, and unless the moon completely covers the sun, none of the phenomena which astronomers often travel thousands of miles to see are visible.

The June 30 eclipse will be seen over a region covering the North Pole, northern Siberia, Greenland, the British Isles, Norway, Sweden and Denmark as well as a good part of the northern Atlantic Ocean. When at its height, about a third of the sun's diameter will be covered. This eclipse will have several strange features. Occurring in the arctic regions in June, it will be at the time of the midnight sun, and so the eclipse of the sun will be seen at midnight—from some parts of the earth. Also, it is first seen to the west of the international date line, while it ends to the east, and according to local time it will end the day, and even the month, before it starts! While it is Sunday to the east of the date line, it is Monday to the west. The eclipse will first be seen from a point in northern Siberia, where it will then be early Monday morning, July 1, with the sun just rising. The last point to see it will be in mid-Atlantic, where it will be sunset on Sunday, June 30.

On Saturday, June 22, the sun will reach its farthest north position in the sky—the point called the summer solstice, and marking the beginning of summer. This will happen at 3:38 a. m., eastern standard time. At this date, for people north of the tropical regions, the sun rises earliest and sets latest, so that this will be the longest day of the year. But in the southern hemisphere conditions are reversed. There it will be the shortest day, and June 22, for the people

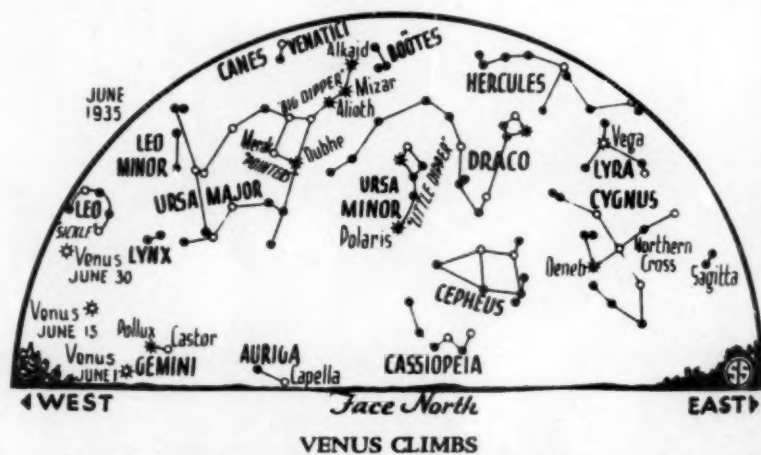
in Australia, New Zealand, South Africa and South America, marks the beginning of winter.

During June it will be interesting to watch the motions of the planets, especially Venus, as they move among the stars. At the beginning of the month it will be just below Pollux, the brighter of the twins, Gemini, as it appears in the west after sunset. It will move eastward, through Cancer, the crab, and at the end of the month will be in Leo, just to the right of Regulus. On this date it will be farthest from the sun, and therefore will be visible for the longest time in the evening, setting after ten o'clock. All this time it is drawing closer to the earth. On June 1 it is 87,270,000 miles from us, and on the 30th it will be only 65,640,000 miles away. During this same time it will continue to brighten, changing from magnitude minus 3.7 at the beginning to minus 3.9 at the end. If, at the end of the month, you look at it through a telescope magnifying perhaps 30 diameters, you will find that it looks like a half moon. Venus, like all the planets, has no light of its own but shines by reflected sunlight. Its hemisphere towards the sun is illuminated, the opposite half is in darkness, just as on the earth. On June 30, however, the hemisphere turned to the earth will include half of the bright and half of the dark sides of the planet. Through a telescope it will look like the

moon at last quarter. Next month, as more and more of the dark hemisphere is presented to us, with Venus coming between the sun and earth, it will show a crescent phase.

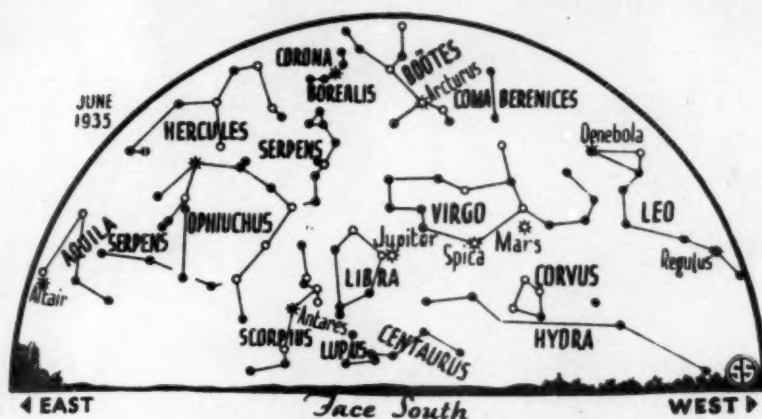
Mars is also moving through the sky, though not with the speed of Venus. On the first it will be a little to the right of the star gamma Virginis, but on the thirtieth it will be to the left, about halfway between that star and Spica. Unlike Venus, Mars is drawing away from us. When the month starts, its distance will be 75,520,000 miles, compared to 93,200,000 when it closes. As it recedes, it will get fainter, decreasing about half a magnitude during the month, but even at the end it will be quite brilliant, of magnitude 0.2, just about as bright as Vega.

Jupiter will not change greatly during the month, although it is moving slowly among the stars from east to west, in the opposite direction to that of Venus and Mars. This is only an illusion, however. Like all the planets, it moves around the sun from east to west, but considerably more slowly than the earth, as it takes about eleven years to complete the trip. At present the earth and Jupiter are on the same side of the sun, and we are overtaking it. Therefore it seems to be going backward, just as a slow freight train seems to travel backwards when you pass it in an express on the next track. Jupiter also is drawing away from the earth. On June 1 its distance will be 414,400,000 miles, and on the 30th, 439,700,000 miles. Its brightness stays at about minus 2, more brilliant than any other star or planet except Venus.



VENUS CLIMBS
If you watch the western heavens during June you may see this most beautiful planet draw farther and farther away from the sun.

• • • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



75,520,000 MILES AWAY

Ruddy Mars is travelling away from us and growing fainter, but even by the end of the month it will still equal the bright star Vega in brilliance.

This month is somewhat unusual in having two new moons. One will occur, of course, on June 30, for only at the time it is new can the moon eclipse the sun. The other will happen on the first of the month. The moon's distance also changed during June. On the 8th it will be at apogee, or farthest away, at the distance of 251,150 miles. Perigee, when the moon is closest the earth, will come on the 20th, when 227,950 miles will separate us. On the evening of June 2, the moon passes Mercury at a distance to the north of less than twice the moon's apparent diameter. But this will be so soon after the moon is new and both bodies will be so near the sun, that it will be almost impossible to observe. The moon will pass Venus on the fourth, Mars on the 11th and Jupiter on the 13th. It will go by Saturn, which is seen after midnight in the east, on the 22d.

The three bright planets that came into the evening sky a few months ago are now drawing closer together, and all shine with great brilliance in the evening skies of June, along with the stars that always appear at this time of year. The brightest of all is Venus, directly west, in the constellation of Cancer, the crab. It is indicated on the accompanying maps, which show the evening skies of June as they appear at ten p. m., standard time, at the beginning of the month, nine p. m. on the 15th and eight p. m. on the 30th.

A little higher, and south of Cancer, is Leo, the lion, in which appears the bright star Regulus, at the end of the handle of the "Sickle," a smaller group forming part of the lion. Next to Leo, towards the south, is Virgo, the virgin. The bright star Spica, about 40 degrees

above the horizon in the south, is in Virgo, and, at present, so is the planet Mars. Jupiter, third planet of the June evenings, is about as high as Spica, but farther east, in Libra, the scales.

The planets are members of the solar system, bodies similar to the earth, which revolve around the sun. The stars are suns themselves, only far more distant than the one that forms the heart of our system. Vega is the brightest star that we can see these June evenings. It is in Lyra, the lyre, towards the east and about as high as Jupiter above the horizon. Just below is Cygnus, the swan, sometimes called the "northern cross," with the cross horizontal, and the star Deneb at its northern end. Altair, in Aquila, the eagle, can be seen low in the east.

Low in the southeast is another brilliant sun, Antares, part of Scorpius, the

scorpion. To the south, above Virgo, is Boötes, from which Arcturus shines. Hanging downwards from the zenith, toward the northwest, is the great dipper, in Ursa Major, the great bear. Below it, near the horizon, can be seen several stars that were conspicuous in the south a few months ago. Next to Cancer, to the north, is the part of Gemini, the twins, still remaining in view, and this part contains Castor and Pollux, the latter to the south. And still lower, farther to the north and hard to see unless you have a clear horizon, is Capella, about all that can be found of Auriga, the charioteer. Directly north can be found Cassiopeia, shaped like the letter W.

Science News Letter, May 25, 1935

PHYSIOLOGY

Doctors Okay Peppermint Candy After Heavy Meal

THE POPULAR custom of offering guests peppermint candy or peppermint cordials after a heavy meal has scientific support in the findings of four Chicago physicians, Drs. H. I. Sapoznik, R. A. Arens, Jacob Meyer, and Heinrich Necheles (*Journal of the American Medical Association*, May 18).

Tests made both on dogs and on human beings showed that the oil of peppermint that is present in peppermint candy has a decided motor action on the stomach. Digestion is speeded up, and the stomach empties an hour faster. The peppermint is particularly useful after a meal with a high fat content, making the person's stomach feel less full and distended.

Science News Letter, May 25, 1935

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MEDICINE

Little Girls Turn Blue From Silver in Their Medicine

FOR the rest of their lives ten little girls will face the world with blue or slate-gray complexions.

Within the last year these girls, as well as five boys, have developed argyria, a discoloration of the skin or tissues resulting from the free use of silver preparations. At present, no treatment for the condition is known.

Dr. L. Edward Gaul and A. H. Staud, New York City, point to the alarming increase in argyria (*Journal, American Medical Association*, April 20). Seventy cases of this permanent discoloration of the skin have been reported, it is declared. The number of cases has increased more than 100 per cent. in the last five years, these medical workers state.

The disfigurement of the fifteen children mentioned, all of whom are under 10 years of age, followed the use in the nose and throat of solutions containing silver for the treatment of colds and

allied conditions. Argyrol, collargol and neo-silvol are the silver compounds involved, according to the report of these two scientists, both of whom are connected with the New York Post Graduate Medical School and Hospital, Columbia University.

Some of the cases among adults have been traced to the use of silver arsphenamine in the treatment of syphilis.

The human body, state Dr. Gaul and Mr. Staud, can retain only so much silver—an equivalent of 8 grams of silver arsphenamine. If more than 7 grams from this or any source is taken in argyria develops.

The discoloration first appears on the face, neck, hands and the half-moons of the finger nails, as a result of the chemical action of the light on the retained silver. Whether a person is a blond or a brunet is a factor, as well as the amount of fat on the body.

Science News Letter, May 25, 1935

on the esophagus, causing symptoms of stricture, or it may compress the lung markedly, giving rise to symptoms simulating tuberculosis.

Dr. Bishop reported two such cases, one of which was confirmed by examination of the chest after the patient's death. He stressed the importance of X-ray examination and the use of barium in studying the esophagus when it seems to be constricted, in order to diagnose the condition correctly. Treatment of the enlarged left auricle and the disturbance it causes depends on correct diagnosis and the avoidance of such procedures as tapping the chest cavity to draw off supposed accumulation of fluid and exploratory operations.

Science News Letter, May 25, 1935

PHYSIOGRAPHY

Russian Proposes Mapping Earth's Radioactivity

MAPPING all the variations of natural radioactivity over the earth is a project put forward by Dr. V. I. Vernadsky of the U. S. S. R. Academy of Sciences. Intensity of radioactivity in each locality would be indicated on the map as a vertical projection, making possible the tracing of "isoradioactive" lines.

Such a map would have a two-fold importance. For the benefit of "pure" science, it would help to bring out more clearly the distribution of crustal rocks in order of their geologic age, for the ages of rocks are indicated in part by their degree of radioactivity. On the applied science side, it might help locate new helium wells, since helium is everywhere a natural product of radioactive decomposition of the rocks, though in only one or two places known at present have conditions been such as to bring about its accumulation in economically paying quantities.

Science News Letter, May 25, 1935

MEDICINE

Heart Enlargement Confused With Tuberculosis and Tumor

PATIENTS apparently suffering from tuberculosis, others who appear to have chest tumors and still others with symptoms of stricture of the esophagus, food passage between mouth and stomach, may instead be suffering from enlargement of the left auricle of the heart, Dr. Louis Faugeres Bishop, Jr., of New

York City, told members of the American College of Physicians.

The left auricle is the heart cavity receiving oxygen-carrying blood from the lungs and delivering it to the left ventricle which pumps this blood to the rest of the body. When this part of the heart becomes extremely enlarged it may press

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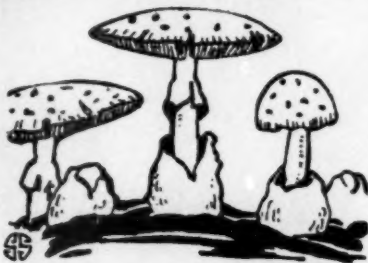
Tuesday, May 28, 3:30 p. m., E.S.T.

FOODS WE EAT AND WHY WE EAT THEM, by Prof. R. Adams Dutcher, Department of Agricultural and Biological Chemistry, Pennsylvania State College.

Tuesday, June 4, 3:30 p. m., E.S.T.

THE MEANING OF MATHEMATICS, by Dr. E. R. Hedrick, Professor of Mathematics, University of California at Los Angeles.

In the Science Service series of radio addresses given by eminent scientists over the Columbia Broadcasting System.



Mushrooms and Toadstools

MANY a camp-supper crisis is precipitated by someone bringing in a mess of beautiful, appetizing mushrooms. The finder is sure they are all right; somebody else is equally sure they are "toadstools." You hate to waste them, and you are afraid to eat them. What to do about it?

There is only one thing that can be done about it: have some really well-informed nature student in your party, who knows the difference between good and bad mushrooms. No rule-of-thumb test is worth anything: poisonous mushrooms do not turn silver spoons black; the peeling of the cap is not an index to edibility; black gills, supposed to be a sign of deadliness, are actually a feature of some of the best mushrooms. There is no royal road to mushroom knowledge; you simply must know the good ones and the bad, species by species.

One simplification can be offered: NEVER eat a mushroom that has a cup around its base and a ring or collar around its stem. Such a mushroom belongs to the deadly genus *Amanita*. A mushroom with only the cup, or one with only the ring, is safe enough; but ring-

plus-cup are the skull-and-crossbones of the fungus world.

It is quite true that there are non-poisonous *Amanitas*, including the famous orange-colored Caesar's mushroom, favorite of ancient Roman gourmets. But it is safer for the amateur to let all *Amanitas* severely alone.

The *Amanitas* are the only dangerous mushrooms that are at all common, but there are other poisonous species. These are mostly just "bellyachers"—they'll make you sick but are not likely to kill you.

If you feel ill after a camp meal, don't always blame the mushrooms. It may be nothing but over-eating that ails you. However, if there are several persons afflicted, all of whom ate the mushrooms, administer emetics and then go to bed as

soon as possible and keep warm. Strong black coffee or other stimulants help the patient over "weak spells." But avoid any form of alcohol; it is not a stimulant but a depressant, the worst thing imaginable under the circumstances. Get a doctor as quickly as possible.

What is the difference between a mushroom and a toadstool? There isn't any difference: the two names are synonyms. Any fungus that has an expanded, more or less circular cap borne on a more or less vertical stalk is a mushroom. It is also a toadstool. The two names are shape-names pure and simple. They do not have anything to do with distinction between poisonousness and edibility.

Nevertheless, it is probably better table manners if you refrain from saying, "Have some more toadstools!"

Science News Letter, May 25, 1935

PSYCHIATRY

New Clue to Epilepsy Found by Hay Fever Tests

THE super-sensitiveness which causes hay fever and hives provides a new clue to epilepsy and mental disorders, it was reported by Dr. Joseph A. Beauchemin of the Middletown, Conn., State Hospital at the meeting of the American Psychiatric Association.

The clue was gleaned from study of the reddened areas called wheals which appear on the skins of sensitive persons shortly after a drop of protein solution has been injected into the skin. The procedure of making these skin tests is familiar to hay fever and asthma patients and sufferers from similar disorders which physicians call allergic. The common feature of all the disorders, ranging from hay fever to migraine headache and hives, is a super-sensitiveness to protein from various sources: plant pollen; foods like milk, eggs, shellfish; feathers; or dust.

Proteins from meats and cereals and fats produced the wheals on the skin of eight-tenths of the epileptic patients, he studied, Dr. Beauchemin reported. From this he concluded that a disturbance in the handling of these foods by the body tissues is an important feature in epilepsy.

The wheals—positive reaction to the scientists—were caused in sufferers from mental disorders not by food or plant proteins but by solutions of gland substances. Patients suffering from dementia

precox were super-sensitive to thymus and sex gland extracts, indicating a disturbance in these glands which may be only a concurrent symptom or may be of more significance.

Patients in the excited phase of manic-depressive disorder were as a group super-sensitive to adrenal, thyroid and pituitary substances. A possible over-activity of the pituitary and adrenal glands which in turn stimulates the thyroid and sex glands is Dr. Beauchemin's interpretation of the results of skin tests with this group. Patients in the depressed phase of the same mental disorder reacted to the gland substances in a way suggesting over-activity of the pituitary and of the cortex of the adrenal glands. More of these patients than of those in any of the other group showed super-sensitiveness to proteins from bacteria, indicating that they might be more susceptible to infectious diseases.

Science News Letter, May 25, 1935

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•First Glances at New Books

Psychology

THE FRONTIERS OF PSYCHOLOGY—William McDougall—*Appleton - Century*, 235 p., \$2. The term "Frontiers" is intended by the author to apply to the relatively unexplored regions that lie between the recognized provinces of the established sciences where there are many problems to be solved only by cooperation between the sciences. What he terms the "naive confessions" of Sir James Jeans and Sir Arthur Eddington in connection with psychology are discussed. Of them he says, "If the more intelligent utterances of these and other leaders of the new physics seem to me 'a sort of mystic chant over an unintelligible universe,' I console myself with the reflection that in this I am not quite alone."

Science News Letter, May 25, 1935

Physics

PHYSICS—A. S. Eve—*Thornton Butterworth, Ltd.*, 15 Bedford St., London W. C. 2, England, 258 p., 2s. 6d. Newest volume to be added to what in England is the popular Home University Library of Modern Knowledge. Descriptive physics with a minimum of mathematics, the book is intended for home consumption by any intelligent layman. Its author is dean of the graduate faculty of McGill University, Montreal.

Science News Letter, May 25, 1935

Education

ANNUAL REPORT, 1933-34—*General Education Board*, 87 p., free. Please enclose 10c. for handling charges, if ordered through Science Service Book Department. An account of how this philanthropic organization disposed of some three millions of dollars.

Science News Letter, May 25, 1935

Economics

PORTLAND CEMENT PRICES—H. P. Willis and J. R. B. Byers—*Ronald Press*, 123 p., \$1.25. Their basis, character and present position.

Science News Letter, May 25, 1935

Education

REDIRECTING EDUCATION, VOL. I: THE UNITED STATES—Rexford G. Tugwell and Leon H. Keyserling—*Columbia Univ.*, 273 p., \$3. The authors of this volume have engaged cooperatively in teaching a course at Columbia University dealing with the problems of our industrial civilization. Those mentioned above write here on "Social Objectives in Education," and "Social Objectives in the

American College." Others contribute to the same volume sections on "Economics in the College," "History in the College," and "Political Science in the College."

Science News Letter, May 25, 1935

Exploration

MEN AGAINST THE CLOUDS—R. L. Burdsall and A. B. Emmons—*Harper & Brothers*, 305 p., \$3.50. High adventure at 24,900 feet in Tibet; being the account of the successful ascent of Minya Konka, second highest peak in the world conquered by man and the record mountain-climbing feat of an American expedition. An excellent account of an arduous journey through a little known part of Asia mixed with the detailed thrills of the final dash up the peak. Crashing snow slides, three thousand foot precipitous drops and hidden crevasses combine with frozen fingers and feet in making the adventure a major achievement in courageous exploration.

Science News Letter, May 25, 1935

Dictionary

THE THORNDIKE - CENTURY JUNIOR DICTIONARY—E. L. Thorndike—*Scott Foresman*, 980 p., \$1.32. A dictionary designed especially for younger students, who have never used such a work before. The definitions are couched in the simplest English, and with many of them examples of use are given.

Science News Letter, May 25, 1935

Biography

HIGH ADVENTURERS—Mary R. Parkman—*Century Co.*, 290 p., \$2. Pleasantly told for junior readers, are the eleven adventurous life stories in this volume. "Science" is represented by Pupin, but Polar flight brings Byrd into the group, wings of adventure introduce Lindbergh, and Stefansson appears as "The poet of intrepid daring."

Science News Letter, May 25, 1935

Chemistry

THE STUFF OF LIFE—Jacob G. Lipman—*Columbia University Press*, 30 p., 50c. Reprint of Prof. Lipman's Chandler Lecture presented at Columbia University in December, 1934, which appeared in *Industrial and Engineering Chemistry* January, 1935. Here is a good popular description of the chemical elements on which life depends; their distribution on earth and what they mean in soil chemistry on which subject the author is an authority.

Science News Letter, May 25, 1935

Physics

EINSTEIN AND RELATIVITY; LE MAITRE AND THE EXPANDING UNIVERSE—Hubert Vecchierello—*St. Anthony Guild Press*, 25 p., 50c. The Dean of St. Bonaventure College collects scattered facts on the education of the greatest Jewish scientist and tells a bit about the meaning of his relativity theories. And then, without a break, the author turns to the youthful Catholic priest who postulated the theory of the Expanding Universe. One wishes only that more details of Abbé Le Maitre's youth and education had been presented by one who certainly knows or has access to them.

Science News Letter, May 25, 1935

Psycho-Analysis

PSYCHO-ANALYSIS FOR TEACHERS AND PARENTS—Anna Freud—*Emerson Books*, 117 p., \$1.75. The well-known psycho-analyst, daughter and colleague of Sigmund Freud, delivered this collection of lectures before the teachers at the Children's Centres of Vienna. The book is translated by Barbara Low.

Science News Letter, May 25, 1935

Zoology

THE DISTRIBUTION OF CERTAIN WHALES AS SHOWN BY LOGBOOK RECORDS OF AMERICAN WHALESHIPS—Charles Haskins Townsend—*New York Zoological Soc.*, *Zoologica*, Vol. XIX, No. 1, 50 p., 4 maps., \$1 plus postage. Whales, for all their size, are elusive creatures, most of the time invisible, thanks to the remoteness of their habitats and the sight-stopping screen of the sea. This account of the known occurrences of whales will therefore have popular as well as strictly scientific interest.

Science News Letter, May 25, 1935

Unnatural History

SCENES FROM THE MESOZOIC—Clarence Day—*Yale Univ. Press*, 82 p., \$2.50. Clarence Day's inimitable nonsense-sketches of amorphous-urodelan-prototrophic creatures having some traces of pseudanthropoid characteristics, with explanatory notes in sophisticated, sardonic verse.

Science News Letter, May 25, 1935

Economics

LETTER TO THE PRESIDENT ON FOREIGN TRADE AND INTERNATIONAL INVESTMENT POSITION OF THE UNITED STATES—George N. Peck—*Govt. Print. Off.*, 3 p., 5 tables.

Science News Letter, May 25, 1935

Physics

A SOURCE BOOK IN PHYSICS—William Francis Magie—*McGraw-Hill*, 634 p., \$5. Newest volume in this popular source book series. For those who do not have time to go back to original sources and translate from foreign languages, it is thrilling to read Hertz's own words when he proved that the waves from sparks and those of light had the same properties and laid the foundations of modern radio; or to follow the experiments of Newton, Faraday and Crookes in their separate and equally important fields.

Science News Letter, May 25, 1935

Psychology

WISH AND WISDOM—Joseph Jastrow—*Appleton-Century*, 394 p., \$3.50. Here you may read in the author's own engaging style an account of superstitions and instances of wishful thinking or lack of it, both ancient and modern.

Science News Letter, May 25, 1935

Sociology

AFTER THREE CENTURIES—E. Huntington and M. Ragsdale—*Williams and Wilkins*, 282 p., \$2.50. A study of race-purity in New England and elsewhere. The authors see, in the dim distance, a biological revolution "which will change the human mongrels of today into genuine thoroughbreds."

Science News Letter, May 25, 1935

Natural History

NATURAL HISTORY PICTURES—Gayle Pickwell—Unit One, ANIMAL STUDIES, 48 pictures. Descriptive booklet, 60 p., \$6; Unit Two, DESERT STUDIES, 48 pictures. Descriptive booklet, 64 p., \$6, *Publishers Distributing Service, Los Angeles*. These collections of pictures, the best obtainable of their respective subjects, will be of great value to teachers, and of the highest interest to the general reader interested in nature. The brief texts give just enough description to stimulate appreciation of the photographs.

Science News Letter, May 25, 1935

Economics

THE GOLD STANDARD AND ITS FUTURE; 3d Ed., Revised and Enlarged—T. E. Gregory—*Dutton*, 184 p., \$1.50.

Science News Letter, May 25, 1935

Dictionaries

PAN-AMERICAN ENGLISH AND SPANISH DICTIONARY AND TRAVEL GUIDE—Lewis L. Sell—*International Dictionary Co.*, 232 p., \$2.50. A dictionary of words and phrases considered useful in Spanish American travel fills two-thirds of this

pocket guide. The rest of the book includes such advice and information as what the tourist should take along on a motor trip, general hints to travelers, distance tables, inter-American steamer services, and facts about countries and cities.

Science News Letter, May 25, 1935

Psychology

PRINCIPLES OF GESTALT PSYCHOLOGY—Kurt Koffka—*Harcourt Brace*, 720 p., \$6.00. More than just a textbook on psychology, this book represents the author's attempt to present a systematic survey of that science, an integration of all its facts, from the viewpoint of the gestalt theory. He says, "Science becomes easily divorced from life. . . . If psychology can point the way where science and life will meet, if it can lay the foundations of a system of knowledge that will contain the behaviour of a single atom as well as that of an amoeba, a white rat, a chimpanzee, and a human being, with all the latter's curious activities, which we call social conduct, music and art, literature and drama, then an acquaintance with such a psychology should be worth while and repay the time and effort spent in its acquisition."

Science News Letter, May 25, 1935

Zoology

A MANUAL OF THE COMMON INVERTEBRATE ANIMALS, EXCLUSIVE OF INSECTS, Revised ed.—Henry S. Pratt—*Blakiston's*, 854 p., \$7.50. Zoologists, especially those who offer courses in comparative zoology, will welcome this new edition of an old and tested standard.

Science News Letter, May 25, 1935

Botany

A LABORATORY MANUAL OF GENERAL BOTANY, Revised ed.—Emma L. Fisk and Ruth M. Addoms—*Macmillan*, 137 p., \$1.

Science News Letter, May 25, 1935

Botany

A TEXTBOOK OF GENERAL BOTANY, 3d ed.—Gilbert M. Smith, J. B. Overton, E. M. Gilbert, R. H. Denniston, G. S. Bryan and C. E. Allen—*Macmillan*, 574 p., \$3.50. This text, which in a dozen years has established itself as a standard in the field of botanical teaching, is again presented in a new revision.

Science News Letter, May 25, 1935

Botany

MANUAL OF THE GRASSES OF THE UNITED STATES—A. S. Hitchcock—*Government Printing Office*, 1040 p., \$1.75. It is no exaggeration to speak of the publication of this, Dr. Hitchcock's *magnum opus*, as a botanical event of first importance. It sets American agrostology's house in order, gives a single, authoritative, convenient point of reference. The working general botanist, no less than the specialist in grasses, will welcome the complete, succinct descriptions, supplemented with generic "keys" where needed, as well as the clean-cut line illustrations and the thumbnail distribution maps that go with each species. The synonymy alone (207 pages of it!) will be worth the price of the whole book to the pestered systematist.

Science News Letter, May 25, 1935

Radio—Navigation

SOS TO THE RESCUE—Karl Baarslag—*Oxford Univ. Press*, 310 p., \$2.50. Hero-adventures that really happened. Stories that will give a real thrill to boys who have reached the age when they are becoming impatient to grow up and be men.

Science News Letter, May 25, 1935

Museums

MUSEUM MEMBERSHIP AND PUBLICITY—I. T. Frary—*American Association of Museums*, 35 p., 50c. Practical directions, even to showing exactly how file cards are marked and the forms used, are given in this pamphlet, to aid the museum executive in organizing a system for membership and publicity departments.

Science News Letter, May 25, 1935

Gardening

GARDENING SHORT CUTS—M. G. Kains—*Greenberg*, 206 p., \$2. A handy-book for the suburban homemaker or the small-scale commercial gardener. It covers all manner of problems, from choosing and maintaining implements to planting, pruning, harvesting and storing.

Science News Letter, May 25, 1935

Engineering

REPORT OF INVESTIGATION: CURING OF CONCRETE PAVEMENT SLABS (Part II, Proceedings of the Thirteenth Annual Meeting of the Highway Research Board)—Ed. by Roy W. Crum—*National Research Council*, 96 p., \$1.

Science News Letter, May 25, 1935

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THE FRONTIERS OF LIFE

'SCIENCE, in obeying the laws of humanity, will always labor to enlarge the frontiers of life.'

Thus the sagacious Pasteur expressed the true purpose of science, but even his rich faith and prophetic vision could not have foreseen the wealth of scientific discovery that recent decades have brought.

In the brief time since Pasteur spoke, the telephone, telegraph, and television have woven romance into the commonplace of everyday communication.

Today a thousand winged horses leap to the command of a solitary pilot to bear him and his cargo from continent to continent. Untold millions of tiny messengers carry his voice to far places. Liquid energy from the depths of the earth gives power to his steeds.

The marvels of modern science are so many, the discoveries so far reaching, that one mind cannot compass them all. But into this world of new wonders we lead our children, expecting them to adjust themselves to the complex life around them. New discoveries and new beliefs must be related to their familiar world. How may the problem best be met?

The modern school accepts this challenge and provides a modern science course which relates all these vivid new discoveries to the pupil's own environment.

From this course the young student carries away a clear concept of the interrelation of these interesting phenomena and of their bearing upon his life and social problems.



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